



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

A BURIAL MOUND OF FLORIDA.

By CLARENCE BLOOMFIELD MOORE.

Florida's burial mounds of sand are fast disappearing through the fruitless search of the treasure-seeking native or the unsystematic explorations of the relic-hunting tourist from

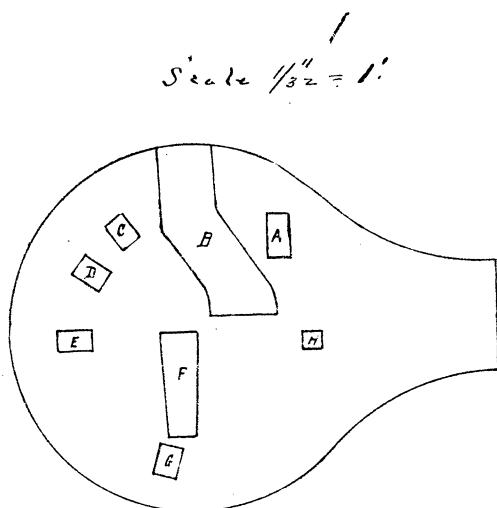


FIG. 1.

Ground Plan of Work.

A, B, C, D, E, F, G, H, various shafts and trenches.

the North. In view of this it would seem fitting to put upon record a comparatively thorough exploration of a somewhat remarkable burial mound previously unopened, and probably unknown to those making scientific investigations in connection with the burial mounds and the shell heaps of the State.¹

¹ The late Jeffries Wyman, in referring to shell heaps not far distant, makes no mention of this mound in his memoir on "The Fresh Water Shell Mounds of the St. John's River, Florida," although carefully indicating all burial mounds coming under his notice. Le Baron, in a long list of the mounds from the mouth to the source of the St. John's (Smithsonian Report, 1882, page 771 et seq.), makes no reference to Tick Island. [It is not included in Thomas' "Catalogue of Prehistoric Works," 1891.—ED. AM. NAT.]

Tick Island, Volusia County, Florida, is reached from the St. John's River by turning east and crossing Lake Dexter to the mouth of Spring Garden Creek, and by following the course of this creek until a tumble-down wharf of palmetto logs is reached, from whence a path half a mile in length leads to the burial mound.

Tick Island is separated from the mainland by a narrow waterway, its other boundaries being Lake Woodruff and Spring Garden Creek. The Island presents in parts a very wild appearance, covered as it is with gnarled live oak and towering palmetto, with trailing vine and tangled undergrowth, where the presence of the rattlesnake imparts a certain risk to exploration. With the exception of one small house upon the island, at intervals occupied by the hired man whose care it is to look after the orange grove, the nearest point where quarters can be secured is at Astor, eight miles distant on the river. It is, therefore, evident that the explorer with his assistants and the necessary workmen, at least four or five in number (for the throwing out of sand from a stifling trench during a hot Florida day demands frequent change of laborers), must either camp upon the island or occupy a boat chartered for the purpose.

SHAPE, SIZE, AND COMPOSITION OF THE MOUND.

The burial mound, seventeen feet in height (spirit level and tape line measurement) and in circumference four hundred and seventy-eight feet, is conical in shape, save to the East, where from the summit a gradual slope extends into a winding causeway or breastwork three hundred and ninety-two feet in length (tape line measurement), averaging four feet in height with an average breadth of twenty-five feet at base and fifteen feet at summit. The description of the composition of the mound is based upon careful observation through parts of ten days of February, March and April, 1891, during which time eight shafts and trenches were dug, the largest being forty-six and a half feet long with an average breadth of thirteen feet, and nine feet deep at the end, having from the level of the ground

followed the sloping base of shell to a point three feet vertically from the centre of the mound where operations were suspended owing to the difficulty and danger of the work, arising from the frequent caving in of heavy masses of sand. It is of course possible that an entire demolition of the mound might to a certain extent modify the conclusions embodied in this description, although in every case the results of the digging correspond in character.¹

Dr. Brinton in his interesting chapter on the antiquities of Florida (*The Floridian Peninsula*), states that during his investigations he met with no stratification in the formation of any of the larger burial mounds. To this the Tick Island mound is a notable exception.

The base of the mound is composed of shells, apparently brought from the neighboring shell fields to serve as a foundation in the marshy soil.

Across the centre of this layer of shells from North to South runs a ridge of pure white sand, more like the sand of the ocean than of the surrounding fields. Above this ridge of white sand is a stratum of dark sandy loam mingled with shells,¹ while the sides of the ridge are rounded out with sandy loam in which shells are wanting, thus forming a symmetrical mound. Through the layer of shell but slight excavation was attempted, owing to its great compactness, its slope being followed at about six inches below its surface. The main trench, running in the same direction as the ridge, followed its course, and at the point where the excavation ended, the layers were respectively five, six, and three feet in thickness.

In the burial mounds at Lake Harney, at the Indian Fields on the Upper St. John's, on Dunn's Island, and at a point on the Eastern bank of the river about eight miles below Enterprise, no stratification was observed, but these mounds having

¹ Portions of the subject matter of this article are contained in a report made to the Peabody Museum of Archaeology, accompanying the bones, pottery and implements secured during the investigation.

¹ It is an interesting fact that the shells of the fresh-water snail of the burial mounds and the shell heaps are larger in size than can be found at the present time in the river and adjacent lagoons.

been opened frequently are now of little value to the archæologist.

HUMAN REMAINS.

During the excavations at Tick Island over one hundred skeletons were exhumed, and that many hundred still remain is beyond the shadow of a doubt.

The skeletons except one (now at Peabody Museum of Archæology) were in a very friable condition, owing to the

$$3^{\circ} \text{ and } 1^{\circ} / 8 = 1^{\circ}$$

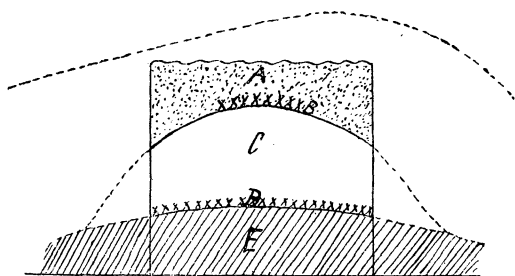


FIG. 2.

End Section of Trench B.

A, layer of sand and loam mixed with shells, B, skeletons on white sand; C, layer of white sand; D, skeletons on the shell; E, shell foundation of mound.

moisture of the sand, requiring the utmost care in handling, and even in the majority of cases rendering futile the most careful efforts to save them. The skeleton recovered entire was in the main trench five feet from the margin of the mound and three feet from the surface. It lay imbedded in the shelly base and through impregnation with lime from its surroundings it had escaped the decay occurring to such a marked extent in all the others. Above it the various strata were undisturbed, showing it to be from no intrusive burial, that *bête noire*

of the careful investigator of mounds which has led at times to so many erroneous conclusions.

The skull of this skeleton was small and round, as were all exhumed at Tick Island in a condition to bear investigation, since the large majority crumbled to pieces upon exposure to the air, or were found crushed through the weight of superimposed sand. No other bodies were found in the shells, but upon

3.

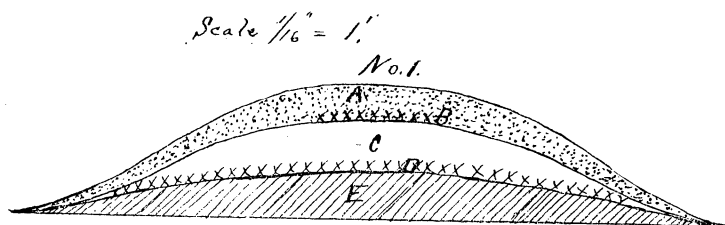


FIG. 3 (1). Section of Mound from North to South.

A, layer of shell, loam and sand; B, skeletons on white sand; C, ridge of white sand; D, skeletons on shell layer; E, shell foundation of mound.

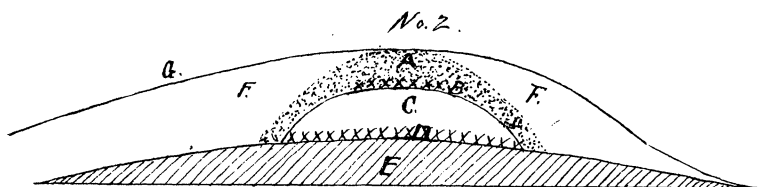


FIG. 3.

FIG. 3 (2). Section of Mound from East to West.

[Lettering same as above.]

F, sand and loam added to fill out the mound; G, gradual slope from the causeway to the summit of the mound.

it, covered with pure white sand, lay numerous skeletons of adults, in some cases the skulls in immediate contact, and this layer of bodies apparently continued through the mound. There seemed to be no fixed position for burial, the bodies lying as though thrown without arrangement, often with arms and legs flexed, and in one case the head pushed down to one

side to such an extent that a portion of the clavicle had entered the mouth.

Several facts in connection with this layer of bodies lying on the shells are very suggestive. All were adults save one, a little child, near whose head three small pots of clay were found. The bodies lay in close juxtaposition, the skulls of some crushed in as by a blow from a blunt instrument; the bones of all the bodies lay in anatomical order, while the white sand in the ridge above was precisely the same shade throughout. From all this it would seem almost conclusive that over the bodies of many men slain in battle a long ridge of pure white sand was erected, and this ridge was never disturbed by subsequent burials, no skeletons being found in the white sand. However upon it many bodies were afterwards placed at intervals and covered with a mixture of sandy loam and shells intermingled, considerably increasing the height of the ridge, which was rounded out with sandy loam to form the mound.

We are told that the lower Creeks and Seminoles hid the bodies of their dead save in the case of a victorious battle, when a mound was raised over them, a fact that would still farther strengthen the conclusion arrived at, were it possible to attribute to the Tick Island mound an origin as late as the occupancy of the Peninsula of Florida by those tribes of Indians.

Upon the mound lies a fallen live-oak that was old when the Creeks left their home to the North, and separate burials were continued long after the fight was over. Moreover, though negative testimony, any investigator of the burial mounds of Florida knows how frequently in post-Columbian times articles valued by the deceased were buried with them, and that, on the river at least, mounds erected or used for intrusive burials after the coming of the whites teem with beads of glass, and that pieces of copper, tomahawks of iron, beads and trinkets of silver and even ornaments of gold are¹ occasionally

¹The supply of iron, copper and silver among the Indians of Florida, must be considered as obtained through the medium of the whites, and this is probably true with respect to gold which, with the silver, was derived from shipwrecks on the coast. It has been asserted that some gold found its way south from the Indians of the north of Georgia, an opinion which Mr. A. E. Douglass, to whom the author is indebted for many valuable references, has ably combated in the *American Antiquarian* for January, 1890. As to ornaments of metal found in Florida, see paper by Le Baron, Smithsonian Report 1882, page 791 et seq.

found in them. In the mound at Tick Island, though careful searchers examined each spadeful of sand, not a bead of glass

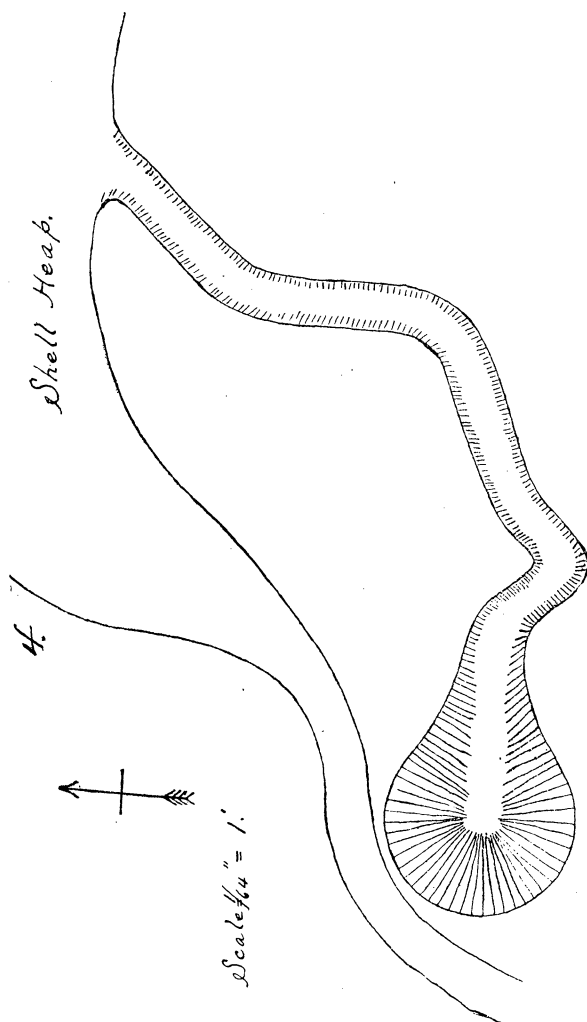


FIG. 4.

Plan of Mound and Causeway.

nor a particle of metal was discovered, a fact very strongly pointing to the conclusion that the mound was no longer used

for burial purposes when the first white men settled in the State.

In many places near the surface of the mound separate bones, or portions of skeletons not in anatomical order, were brought to light, suggestive of a custom of the earlier Indians, who are known to have exposed bodies to the elements or to have buried them until, through decomposition they were more readily enabled to separate the flesh from the bones, which were gathered together and buried at stated periods. It is possible, however, that separate bones (and these bones were always near the surface) were due to the disarrangement of previous interments caused by intrusive burials.

The teeth in all the jaws exhumed were remarkably perfect. In no case was any decay apparent and almost never was there a missing tooth, though many were unusually worn as from chewing upon hard substances, possibly fragments of shell found in conjunction with their usual diet.

A number of bones of great pathological interest were brought to light. In three excavations a number of tibiae were found marked with anterior curvature, great increase in circumference and abnormal roughness of surface, giving evidence of a chronic inflammatory action, while in one instance, at least, a portion of a shin bone was found bearing the marks of acute inflammation. While the condition does not offer absolute evidence as to the existence of a certain blood disease¹ among the Indians who made the mound, the period of the origin of which disease is still in doubt, it is certain that it would produce like results.

WERE THEY CANNIBALS ?

In immediate association with at least five skeletons in the lower levels of the Tick Island mound were found bones charred and calcined by the action of fire. Of these bones portions were positively identified as belonging to the cranium and ulna.

¹The American Journal of the Medical Sciences, August 1891, "A Contribution to the Study of Pre-Columbian Syphilis in America." By James Nevins Hyde, A. M., M. D.

That the makers of many of the shell heaps of the River were cannibals is everywhere admitted since the researches of Professor Wyman; and the writer, in January, 1873, found in a shell heap in a swamp near the west bank of the St. John's, a few miles north of Palatka, in association with the bones of the deer and other animals which had been similarly treated, many human bones showing the action of fire, and split, presumably more readily to extract the marrow. With them lay an arrow head of bluish flint. We do not know that the makers of the burial mounds and of the shell heaps were contemporary, and in the burial mounds, with the exception of the one at Huntuon's Islands, referred to by Professor Wyman (*Fresh Water Shell Mounds of the St. John's River, Florida*, page 28) the writer has been unable to learn of any discoveries pointing to the use of the human body for food. But the presence of these charred human remains would be difficult to explain save by the hypothesis of cannibalism or human sacrifice by fire, in which event, cannibalistic rites might possibly be included.

PERFORATED CRANIA.

Among the objects found in the Tick Island mound were two portions of separate crania; one with two perforations about the circumference of an ordinary lead pencil, the second with a similar hole in the centre and the evidence of another on its margin. The origin of these perforations is difficult to explain. No weapon known to the Indians could have caused such a perforation by a single blow, and even admitting the presence of the whites, no bullet or buckshot could have caused the holes, since the perforation was of equal size and regularity on either side, with no splintering of the inner table, as is the case with gunshot wounds of the skull.

Not far distant from these fragments was found a piece of bone (unidentified) with a perforation half an inch in diameter. In many parts of Florida pieces of shell, pottery and stone are met with, having single and double perforations, and were probably used as talismans, though it is possible that in the case of the pottery the perforations made from either side and meeting in the middle, precisely in the manner

described by Professor Morse¹ as existing in fragments of pottery, found in the shell heaps of Japan, served the same purpose as there, to furnish means of strengthening cracked earthenware or of joining that already broken. Be this as it may, perforated objects of stone and shell are found which must be considered as charms and amulets, and it is possible that the fragments of bone were put to a similar use.

But the cranial perforations at least admit of a very different explanation, if we suppose the skulls to have been buried entire with subsequent separation through pressure of sand or through decay. While perforated crania in Florida are hitherto unreported, barring hearsay testimony, their discovery is no novelty in Michigan, where numbers have been found in the great mound at Rouge River and others near Detroit. It is presumable that these holes were made more readily to suspend the cranium of an enemy, similar perforations, it is stated, being formerly customary among the head-hunting Dyaks of Borneo. For fuller details as to perforated crania the reader is referred to *American Antiquarian*, vol. xii, p. 165, and vol. ix, p. 392; also to Henry Gillman's most interesting paper in the Smithsonian Report for 1875, p. 235, et seq.

POTTERY.

From the Tick Island mound hundreds of pieces of pottery were taken, the great majority rude and unornamented, the rest decorated with lines, with crossed lines and with knobs, the latter a form unfamiliar to the writer. In no case in any part of the mound were fragments of pottery discovered that had any connection with each other, no matter how closely associated. From the lowest level, pottery showing equal advancement in the arts was taken as from near the surface. It is safe to infer that these bits of pottery, many of which were shaped in a form suggestive of lance heads, were placed with the dead in fulfilment of sacred rites. The presence of broken pottery in the upper portions of the mound where the sandy loam was mixed with the shells could readily be explained by the supposition that the soil brought from the

¹Shell Mounds of Omori, Tokio, 1879, p. 9.

neighborhood of the shell fields would naturally be intermingled with debris, but in the lower portions of the mound where pure white sand alone covered the bodies, two or three pieces of pottery were almost invariably found in close association with each skeleton usually near the skull. The Etruscans often buried hollow jewelry with their dead, doubtless not caring to waste solid ornaments on the departed. May we not infer then, that the savages of Tick Island, wretchedly poor, since not even stone was indigenous, hesitated to bury with the deceased his most precious implements upon which his descendants doubtless looked as a coveted inheritance, but rather satisfied their cupidity and their conscience by the interment of fragments of pottery in place of the cherished weapons and implements of stone.

IMPLEMENTS, WEAPONS AND ORNAMENTS.

In the main trench were found: three small earthenware pots, unornamented, lying near the body of a child an arrowhead of whitish flint; a small chisel of stone; two discs of shell, each with two small perforations; a small pebble of quartz from the seashore, around the lesser end of which a groove had been cut; four beads of shell and a number of chippings of flint. In a large excavation made on the south side of the mound were brought to light: a spear head of flint, five inches in length; one rude arrow head; one flake of flint; a large quantity of small shell beads; three barrel shaped beads made from the columella of the *Busycon*, or conch, two, one inch in length, the other, one and three quarter inches. Large shell beads of this kind, probably made in Florida, have been found as far north as East Tennessee¹.

IS IT A SERPENT MOUND?

If any effigy mounds are to be found in Florida, they are of exceeding rarity. During fifteen winters spent in the State, none have come under the notice of the writer. In *Emblematic Mounds and Animal "Effigies,"*² is cited a description by S. T. Walker of an effigy mound in the form of a

¹Fresh-water shell Mounds of the St. John's River, p. 56.

²By Steven D. Peet.

turtle on Long Key off the south-western coast. The author is not entirely persuaded that the shape arose from design; he informs us, however, that turtles abound in the vicinity. This is the only allusion to an effigy mound in Florida that the writer has been able to discover.

As has been stated, a long and winding causeway joins the Tick Island mound, which on this side, sloping¹ to meet it is much less steep than elsewhere, and were the palmettoes and undergrowth cleared from the causeway the resemblance to a serpent would be strong.

In the rainy season the territory surrounding the burial mound becomes soft and swampy, and a causeway to the place of sepulture would prove a great convenience and for this purpose the causeway doubtless served, though its winding shape may have been intended also as emblematic. The raised pathway terminates at a large bean-shaped shell or refuse heap, upon which and the adjacent acres of shell-fields the Indians doubtless lived, and if the causeway were to serve as a means of communication alone, it seems fair to suppose that the natives with their limited methods of conveyance would have made it in as straight a line as possible. Moreover, a second causeway, skirting the base of the mound runs in a direct line from the great shell heap, towards the solid hammock land beyond.

It is impossible with our present light to state what race or races² piled up the burial mounds and by the slow deposit of debris formed the vast shell heaps of the river and of the coast, since many mounds give no evidence of intercourse with the white men, while such as do, may furnish their beads of glass and ornaments and implements of metal through the intru-

¹This slope is found in many burial mounds, but not such a causeway.

²Prof. Wyman [Fresh-water Shell Mounds of the St. John's River, Florida] has estimated the age of a live oak fifteen feet four inches in circumference growing upon a shell heap investigated by him, to be not less than three hundred years. On a shell heap in the immediate vicinity of the burial mound at Tick Island, grows a live oak twenty three feet five inches in circumference. Moreover, as Professor Wyman points out, the age of trees upon shell heaps can furnish but a minimum estimate since centuries may have elapsed before the sprouting of the oak. It must, however, be borne in mind, that conclusive proof never as yet has been furnished as to the contemporaneous origin of the shell heaps and of the burial mounds of sand.

sive burials of later Indians. Hence all data are wanting as to the superstitions of the Indians who built the mounds. Still, it is well known how widely the cult of the serpent has obtained in various parts of the world, and it is not unlikely that the savages of Tick Island, where the *Crotalus* and other snakes are numerous, if erecting an effigy mound, should give it the form of a serpent.

We are told¹ that the Indians of the sixteenth century along the St. John's, held the serpent in veneration and treated with every mark of respect the head of a snake cut off by a soldier of De Gourgues.

Moreover, it is not infrequently the case that a conquering race, when amalgamating with a conquered people in taking possession of the soil, incorporates with its own the worship of the vanquished, and it would seem at least fair to conjecture that the worship and veneration of the serpent descended from the earlier inhabitants of Florida through Indians of whom we have historical record, to the Seminoles.

How the Seminoles of a century ago regarded the rattlesnake is amusingly told by the naive though learned William Bartram, who just before our war of Independence made a journey up the St. John's as far as Lake Beresford.²

In the great serpent mound of Ohio the head and the body are of nearly the same height, while a difference of thirteen feet in favor of the head exists in the Tick Island mound. Moreover the head or mound proper has been extensively used for burial purposes. In view of these facts and the probable absence of effigy mounds elsewhere in the state³ the weight of evidence would seem to bear against the existence of a serpent mound on Tick Island. Nevertheless there are enough points in its favor to justify the writer in hazarding the suggestion.

THE HEIGHT OF THE FLORIDA MOUND BUILDERS.

Although not bearing directly on the Tick Island mound, yet as applying to it and to many other mounds and shell

¹Floridian Peninsula, p. 131.

²Travels, Chap. IX.

³Prof. Putnam in a letter to the writer states that no effigy mound in Florida has ever been brought to his notice.

heaps investigated by the writer on the east coast, the west coast and the River, a few words as to the stature of the mound builders may not be considered amiss.

In forming estimates from the whole or a part of a skeleton, as to the height of the body during life there is but one basis upon which to go: actual measurement; and unless these data are furnished by men of the utmost reliability, measurements made in person are alone of value.

As the German physicians where no post mortem has been made dismiss useless theorizing as to the cause of death with the simple words "no autopsy" so it is well to put aside all reports of the finding of skeletons which, "judging from their bones must have been of giants."

In all scientific researches of this nature the explorer comes in contact with three classes of inhabitants, the conscientious resident whose memory is possibly defective; the kind-hearted inhabitant, who, having learned what information is wanted, rather than disappoint, will corroborate anything; and the facetious native, who, seeing a city man spending time and money upon what he regards as matters of small import, takes delight in filling to repletion, with marvelous details evolved from his own imagination, the person whom he considers to be a mild form of lunatic.

For a scientist with a theory to establish the native Floridian is an acquisition beyond price.

On an average the length of the femur is about two hundred and seventy five thousandths¹ of the entire height; thus the thigh bone of a six foot man would be 19.8 inches in length. To those unfamiliar with this relative size of the thigh bone, a femur when found in nearly every case gives the idea of having done duty in a body of abnormal size.

The writer well recalls in March 1879, while engaged in an imperfect investigation of the burial mound at Bluffton on the St. John's, having found a skeleton and in association with it a pipe of stone, an arrow head and a portion of a drinking cup wrought from a human skull and ornamented—an object by the way, of great archæological interest. The femur of this

¹Professor George A. Piersol.

skeleton seemed so large that it required the assurance of a professor of Harvard to carry conviction to the finder then unfamiliar with the ratio existing between thigh bone and skeleton, that the remains of a giant had not been disinterred.

In the burial mound at Tick Island, over one hundred skeletons were found, none belonging to men of extraordinary size, while the same holds good in the case of very many skeletons excavated by the writer on other parts of the river and the coast, while the same may be said of bones found in orange groves and cultivated land where the spade or plow of the agriculturist had left them. Great pains have been taken by the writer, and considerable distances have been traveled to inspect the bones of so-called giants and ever with a like result. The bones, if forthcoming at all, have never indicated a greater stature than can readily be found among the white men of to-day.¹

It is true that Dr. Brinton (*The Floridan Peninsula*, page 171) cites a case reported to him of the finding in that State of skeletons of abnormal size. In this instance, no measurements were made, but it must be remembered, however, that even conscientious men, when measuring a skeleton laid at length upon the ground, frequently fail to make due allowance for the interlocked portions, or joints, and arrive at an estimate greater than is justified by fact. Upon the whole, it would not be unsafe to assert that the former races inhabiting Florida contained no taller men than can readily be found at the present time.

¹The writer in May, 1891, while investigating a burial mound and certain shell fields in one of Florida's coast towns, was waited upon by a professional man of the place and informed of the recent finding of a skeleton nine feet in height. At the close of the interview, it had diminished a foot and the admission was made that the skeleton had not been personally inspected.

The writer next sought his informant's informant. According to him the skeleton was seven feet in height "and the skull would hold a peck."

Next the original finder of the bones was visited. He considered the skeleton to have belonged to a very large man, but had made no measurements. The skull alone had been kept. It proved to be somewhat below the average size.